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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/291,832	04/14/1999	WOLFGANG JACOBSEN	MO-5152/LEA3	2636

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PATENT DEPARTMENT
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EXAMINER	
LESPERANCE, JEAN E	

ART UNIT	PAPER NUMBER
2674	25

DATE MAILED: 03/10/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/291,832	JACOBSEN ET AL.	
	Examiner	Art Unit	
	Jean E Lesperance	2674	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *06 October 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *26-50* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *26-50* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *14 April 1999* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claims 26-50 are presented for examination.

Claim Objections

Claim 26 is objected to because of the following informalities: [a display device with comprising] should be replaced by a display device comprising. Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 48 recites the limitation " the frequency and the electrical signal " in lines 12 and 13. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 26-50 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent # 4,916,308 ("Meadows") in view of U.S. Patent # 4,847,606 ("Beiswenger").

As to claims 26 and 48, Meadows teaches a top glass plate fig.1 (15) corresponding to transparent cover plate, a bottom glass plate Fig.1 (14) corresponding to a transparent support plate and a photodetector Fig.1 (64) mounted on the bottom glass plate (see fig.3) corresponding to at least one photodetector that is mounted on the support plate and that has a photosensitive solid angle range so that the support plate lies in the photosensitive solid angle range, a thin layer of conventional nematic-type liquid crystal material Fig.1 (13) is sealed between the plates 14 and 15 in which includes an electrochromic cell or a liquid crystal cell corresponding to an electrochromic cell or a liquid crystal cell located between the transparent cover plate and the transparent support plate. Accordingly, Meadows teaches all the claimed limitations as recited in claim 26 with the exception of providing a light source a radiation source radiation source arranged on at least one end face of the transparent cover plate.

However, Beiswenger teaches a light source Fig.2 (20) which passes through windows 24 of liquid crystal display panel 22 forwardly, to be reflected 90 degrees by mirror portion 26.

It would have been obvious to utilize the light source as taught by Beiswenger in the flat panel liquid crystal display disclosed by Meadows because this would provide

between the liquid crystal panels for insertion of a finger or other opaque member to occlude at least one of the individual light beams.

As for claims 27 and 28, Meadows teaches a thin layer of conventional nematic-type liquid crystal material Fig.1 (13) is sealed between the plates 14 and 15 in which inherently includes an electrochromic cell or a liquid crystal cell where the plates inherently provide electrical coating for the electrochromic medium corresponding to wherein the cover plate and the support plate are joined together by a ring seal to form a cell, and an electrochromic medium is located in the cell volume, and the plates are provided with a transparent electrically conductive coating on their sides facing the electrochromic medium.

As to claims 29 and 30, Meadows teaches a thin layer of conventional nematic-type liquid crystal material Fig.1 (13) is sealed between the plates 14 and 15 in which inherently includes a coating on the bottom plate corresponding to the electrochromic cell or the liquid crystal cell has a coating on the bottom plate that predominantly reflects visible light while it is predominantly transparent to the light emitted by the radiation source and the electrochromic cell or the liquid crystal cell has a coating on the bottom plate that optionally contains a location transparent to the light from the radiation source at the center of the photosensitive solid angle range of the photodetector.

As to claim 31, Meadows teaches a thin layer of conventional nematic-type liquid crystal material Fig.1 (13) is sealed between the plates 14 and 15 in which inherently includes a semi-transmissive and semireflecting coating on the side of the support plate corresponding to wherein the electrochromic cell or the liquid crystal cell has a semi-

transmissive and semireflecting coating on the bottom plate. It is very well known in the art for the liquid crystal cell or electrochromic cell to have a semi-transmissive and semireflecting coating.

As to claim 32, Meadows teaches a thin layer of conventional nematic-type liquid crystal material Fig.1 (13) is sealed between the plates 14 and 15 where the light source propagates completely through the panel corresponding to wherein the electrochromic medium or the liquid crystal medium is two-dimensionally illuminated from the side facing the support plate.

As to claims 36 and 37, Meadows teaches a glass plate Fig.1 (15) corresponding to the cover plate where the a thickness of at least 0.05 mm and a refractive index of at least 1.5 are both design choice.

As to claims 38 and 39, Meadows a thin layer of conventional nematic-type liquid crystal material Fig.1 (13) is sealed between the plates 14 and 15 where glass plate 15 may or not be greater than glass plate 14 corresponding to the intermediate layer has a refractive index that is less than the refractive index of the cover plate.

As to claims 41 and 42, meadows teaches a light source 40 corresponding to the radiation source and it is well know for the wavelength of light to be more than 680 nm.

As for claims 43-47, Meadows teaches a control system comprises a liquid crystal display panel; a light source; and a light detector. Light from the source is directed through at least a portion of the liquid crystal display panel to the light detector. A control circuit is provided for holding the liquid crystal display in generally opaque condition while preferably sequentially momentarily clarifying segments of the

portion, whereby momentary, sequential, transversely spaced light beams are generated between the light source and the light detector. A timer and logic circuit is provided for correlating signals received from the light detector with generated, individual, spaced light beams that create the signals corresponding to wherein the end face illuminated by the radiation source is roughened so as to b weakly scattering, wherein at least one and at most three end faces of the cover plate are coated with an optically reflecting material, wherein the optically reflecting material is gold, silver, copper, nickel or aluminum, and mixtures thereof, and the layers are produced by evaporation coating, sputtering, CVD or adhesive bonding of metal-coated films, wherein a plurality of photodetectors are fitted on the support plate, a specific region of the cover plate, in which a region is uniquely assigned to the photodetector, lying in the photosensitive solid angle range of each photodetector, and wherein a unit for processing the electrical signal is connected downstream of each photodetector.

As for claims 49 and 50, Meadows teaches the frequency with which the first column 54 and last column 66 of pixels 28 is scanned depends upon the time required for the molecules of the liquid crystal material to change from the "OFF" to an "ON" state corresponding to wherein the relative width of the frequency band accepted during the further processing in the signal from the photodetector around the frequency is less than 0.1 and wherein the touch sensor can be switched off fully or for a limited time and, after a predetermined time, switches itself on again or can be switched on again by a specific signal sequence.

Claims 33-35, Meadows teaches each glass plate 14, 15 carries a neutral density linear polarizer. The polarization plane of one polarizer is parallel to the polarization plane of the other polarizer. Accordingly, whenever visible light is projected toward any pixel 28, the light is plane-polarized as it passes through one glass plate 14. In the absence of an applied potential difference across the pixel, the polarization direction of the light is rotated 90.degree. as the light propagates through the liquid crystal material 13. Accordingly, the light is absorbed by the polarizer on the other glass plate 15 (column 3, lines 11-21) and the reflection means and second reflection means are mirrors mounted on opposing sides of the panel, the mirrors defining an optical path along which light passing through a first pixel in the transparent state that is in the first column is directed to a second pixel that is in the second column of elements, wherein the first and second pixel are in the same row (column 6, lines 52-59) corresponding to the two-dimensional illumination is carried out through an optically transparent grid plate that is arranged between the bottom plate and the support plate, (ii) a light source is arranged on at least one of the end faces of the grid plate and the grid plate having, on the side remote from the support plate, an optically refractive grid like surface structure for positionally metered emergence of light from the interior of the plate, and (iii) a scattering layer serving as an illumination surface is arranged on or over this side.

As for claim 40, Beiswenger teaches touch panels for control systems may be of the capacitive, resistive, or radiant energy types. Radiant energy type touch panels typically use infrared radiation. However, each of these prior art systems, up to the

present time, exhibit limitations and disadvantages. For example, the probe which must be used to activate the touch panel must be large for the radiant energy system, soft for the resistive system, and conductive for the capacitive system (column 1, lines 10-18) corresponding to the intermediate layer comprises air or LTV radiation-polymerizable mixtures of polyfunctional (meth)acrylic acid derivatives, monofunctional (meth)acrylates or suitable photoinitiators, or of solid materials produced using a sol-gel process and having a porosity of more than 50% based on silicates, aluminates and other binary or ternary systems.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jean Lesperance whose telephone number is (703) 308-6413. The examiner can normally be reached on from Monday to Friday between 8:OOAM and 4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Hjerpe, can be reached on (703) 305-4709 .

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

or faxed to:

(703) 872-9314 (for Technology Center 2600 only)

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal

drive, Arlington, VA, Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.

Jean Lesperance

Art unit 2674

Date 3-5-2003

Lun-Yi Lao
Primary Examiner